# Update on Expert Groups
# On-going and planned activities

**Ioannis Theologitis, ENTSO-E**

**11th Grid Connection European Stakeholder Committee Meeting**

14 September 2018, Brussels

Change of name according to the ToR of the EGs

# Update on Technical Groups On-going and planned activities

**Ioannis Theologitis, ENTSO-E**

**11th Grid Connection European Stakeholder Committee Meeting**

14 September 2018, Brussels

# Technical Groups

- High Penetration
- Compliance Monitoring

# Technical Group on High Penetration (TG HP)

- Volunteers from 6 stakeholder groups:
  - TSOs: 2 Representatives
  - Wind Manufacturing Industry: 4 Representatives
  - HVDC Manufacturing Industry: 2 Representatives
  - PV Manufacturing Industry: 1 Representative
  - Power System Analysis tool providers/Consultants: 2 Representatives
  - Academia: 2 Representatives

- Stage 2 (2017 – 2019): High Penetration (HP)
  Longer term analysis and input into issues of extreme high penetration

- Is currently working on a joint report on grid forming capabilities
  - Contribution for setting up requirements on grid forming capabilities in future grid/network codes
- Inputs:
  - Links to research projects e.g. Migrate and Osmose
  - Projects with focus grid forming were already collected
  - Liaison with EG hosted by National Grid

Release draft report for consultation possibly end of 2018.

# Technical Group on compliance monitoring (TG CM)

- Total ≈ 25 experts from 22 companies
- Stakeholder groups represented in EG: Turbine manufacturing industry, wind manufacturing industry, co-generation industry, engineering and certification bodies, utility companies, energy suppliers, DSO association, consultant companies, standardization entities,…
  *(list to be refined)*

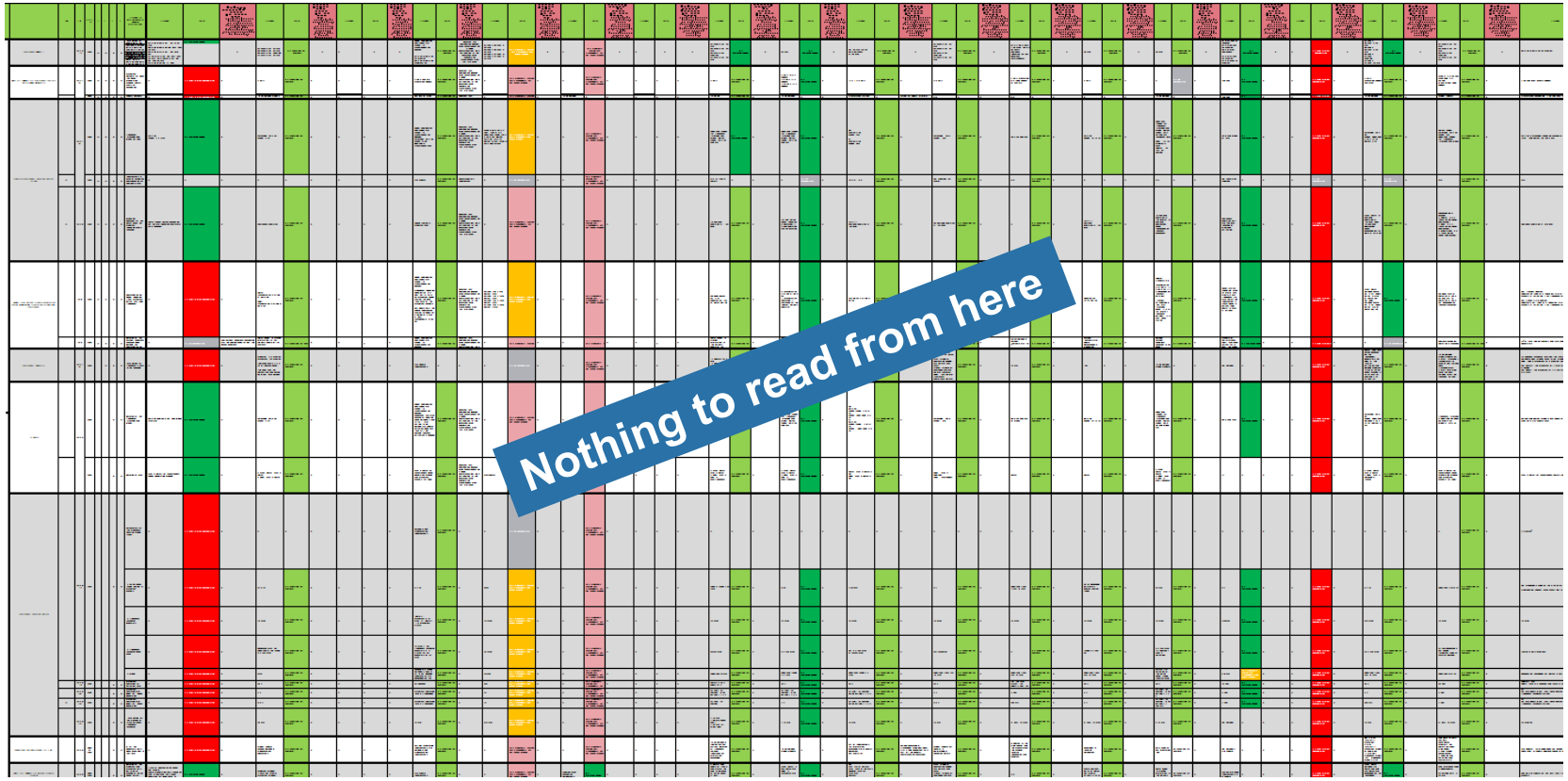
Status of work:

- The joint team - CENELEC/WG3 and ENTSO-E/EG CM – met end of April
- Deliverable: EN50549-10 report
- Possible adaptations to IGD on Compliance Monitoring
- If required EG CM will have own meetings (none planned yet)
- Experts from the EG CM were advised to join WG3 of CENELEC for easier access to the materials
- Future updates can be done jointly by CENELEC/ENTSO-E to the GC ESC

Next meeting under preparation

# Monitoring of non-exhaustive requirements

# Monitoring Excel File – Active Library




But from here:
https://docs.entsoe.eu/cnc-al/

- The RfG list is almost fully complete with all the non-exhaustive parameters under approval or approved
- DCC and HVDC deadlines for submitting the non-exhaustive are in September 2018 and therefore more complete information are planned to be shared in the coming weeks.

# Overview of planning

# Overview planning for next months

Process for drafting proposal
Public Consultation
TSO deadline for submitting propose

| NC | Article | Level 1 Article content/activity | Consultation Period |
|---|---|---|---|
| CNCs | n/a | Creation and maintenance of the Active Library for monitoring the implementation process + the monitoring excel file | |
| RfG | A 59 | Initial monitoring of non-exhaustive parameters definition - Implementation | |
| DCC | A 57 | Initial monitoring of non-exhaustive parameters definition - Implementation | |
| HVDC | A 76 | Initial monitoring of non-exhaustive parameters definition - Implementation | |
| RfG | A 58 | Non-binding guidance on implementation / legal mandate under the RfG | 01.07.2016 – 15.08.2016 |
| DCC, HVDC | A 56 (DCC), A | Non-binding guidance on implementation / legal mandate under the DCC and H | 08.12.2016 - 16.01.2017 |
| RfG | A 59 | RfG List of information to ACER (Monitoring activity) | |
| DCC | A 57 | DCC List of information to ACER (Monitoring activity) | |
| HVDC | A 76 | HVDC List of information to ACER (Monitoring activity) | |
| CNCs | A 59 (RfG), A 57 (DCC), A | Monitoring (analysis and preparation of report) | |
| CNCs | n/a | Inter-TSO coordination activities for the CNC implementation (drafting of a | |
| CNCs | A 58 (RfG), A 56 (DCC), A | Draft and publish Implementation Guidance Documents on frequency related parameters (8 documents) | 20.11.2017 – 21.12.2017 |
| CNCs | A 58 (RfG), A 56 (DCC), A | Draft and publish Implementation Guidance Document on cost benefit analysis (CBA) with the support of a stakeholder's expert group | 29.01.2018 – 02.03.2018 |
| CNCs | A 58 (RfG), A 56 (DCC), A | Draft and publish Implementation Guidance Documents on HVDC related matters (3 documents) | 26.03.2018 – 04.05.2018 |
| CNCs | A 58 (RfG), A 56 (DCC), A | Draft and publish Implementation Guidance Document on High Penetration of Power Electronic Interfaced Power Sources (HPoPEIPS) with inputs from a stakeholder's expert group | 05.04.2017 - 05.05.2017 |
| CNCs | A 58 (RfG), A 56 (DCC), A | Draft and publish Implementation Guidance Document on Compliance Testing and Monitoring with the support from a stakeholder's expert group | 08.12.2016 – 16.01.2017 |
| CNCs | n/a | Technical Group on High Penetration (former Fast Fault Current Injection) | |
| CNCs | n/a | Technical Group on Compliance Monitoring - from April 2018 in collaboration with TC8X WG3 of CENELEC | |
| CNCs | n/a | Engage with standardisation bodies i.e. CENELEC for consistency between the Codes and Standards | |
| CNCs | n/a | Expert Group on pump storage hydro (EG PSH) | |
| CNCs | n/a | Expert Group on identification of storage devices (EG STORAGE) | |
| CNCs | n/a | Expert Group on mixed customer sites (EG MCS) | |
| CNCs | n/a | Engage with stakeholders/ACER/EC through the European Stakeholder Committee for Grid Connection (GC ESC) | |

# Tentative dates from doodle results

- **Expert Group on Pump Storage Hydro**
  - 15 October 2018, 11:00-16:00 (tentative), kick off meeting, ENTSO-E
  - 13 November 2018, 14:00-16:00 (tentative), webinar
  - 10 December 2018, 14:00-16:00 (tentative), webinar

- **Expert Group on Identification of storage devices**
  - 15 October 2018, 11:00-16:00 (tentative), kick off meeting, ENTSO-E
  - 23 November 2018, 13:00-15:00 (tentative), webinar
  - 20 December 2018, 11:00-13:00 (tentative), webinar

- **Expert Group on Mixed Customer Sites**
  - 19 October 2018, 11:00-16:00 (tentative), kick off meeting, ENTSO-E
  - 19 November 2018, 14:00-16:00 (tentative), webinar
  - 17 December 2018, 14:00-16:00 (tentative), webinar

***Final dates to be communicated next week***

# Way forward for Technical Group High Penetration

- Describe individual aspects of grid forming capability
- Describe design/sizing consequences for PE interfaces
- Describe possibilities and limits of grid forming with respect to size of storage and/or current headroom
- Give brief (!) cost indications related to individual or combinations of grid forming capabilities
- Set up benchmarks for evaluation of compliance including testing
- Publish draft for consultation
- Publish final results

Back up slide

# Status of work and members' considerations

Status of work:

- Further work on individual grid forming capabilities
- First inputs expected before summer break
- Draft report for stakeholder consultation by end of 2018

Considerations from members:

- Timeline for introduction of new inverter control
- Need cases expected (TSO studies that lead to new requirements regarding control)
- Requirements as performance specification (allowing different implementations and solutions)
- Agreeing to proposed format of final report (joint document)

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